Available Online at www.ijcsmc.com

International Journal of Computer Science and Mobile Computing

A Monthly Journal of Computer Science and Information Technology

ISSN 2320–088X

IJCSMC, Vol. 2, Issue. 5, May 2013, pg.145 – 154

RESEARCH ARTICLE

AN IMAGE ENCRYPTION USING BIT LEVEL PERMUTATION AND DEPENDENT DIFFUSION

G.S. Nandeesh[1], P.A. Vijaya[2], M.V. Sathyanarayana[3]
[1]M. Tech Student (DECS) Mce, Hassan, Karnataka, India
[2]Professor BNMIT, Bangalore, Karnataka, India
[3]Principal Mce, Hassan, Karnataka, India

[1] nandi.kit@gmail.com; [2] pavmkv@gmail.com; [3] principal@mcehassan.ac.in

Abstract— Chaos-based cryptosystems have been studied extensively due to their superior properties in security and complexity. Recently, quite a lot of chaos-based image encryption schemes have been proposed. Most of them adopt the traditional permutation and diffusion operations. The drawbacks are: the architecture is not sensitive to changes in the plain-image and they are insecure upon chosen/known plain-image attack. Due to the favourable properties of bit-level permutation, we propose a bit-level confusion and dependent diffusion to enhance the security of the cryptosystem and to reduce the computation redundancy in traditional architectures. Simulations have been carried out and the results demonstrate the superior security and high efficiency of the proposed scheme.

Key Terms: - Encryption; image; Bit level permutation; confusion; Chaos; Cryptography; Image encryption; information security

Full Text: http://www.ijcsmc.com/docs/papers/May2013/V2I5201361.pdf